Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1.   (Original) A method for generating a portion of an image, the method comprising:

        receiving an identification of a modification region in an original image;

        calculating a differential representation of an image texture region;

        calculating a differential representation of boundary pixels in the original image, wherein at least some of the boundary pixels are outside of and adjacent to the modification region;

        generating new differential pixel values for the modification region using the differential representation of the image texture region to obtain substantial consistency with the differential representation of the boundary pixels; and

        integrating the new differential pixel values to obtain a modified image.

2.   (Original) The method of claim 1 further comprising using the modified image as a replacement for the modification region of the original image.

3.   (Original) The method of claim 1 further comprising receiving an indication of an area in the original image that comprises the image texture region.

4.   (Currently Amended) The method of claim 3 wherein the image texture region is derived from a portion of the original image that overlaps at least one of the modification region [[and]] or the boundary pixels.

5.   (Original) The method of claim 1 further comprising receiving an indication
of an area in an image, other than the original image, that comprises the image texture
region.

6.   (Original) The method of claim 1 wherein calculating a differential
representation comprises determining derivatives using a predefined kernel.

7.   (Original) The method of claim 6 wherein calculating a differential
representation comprises calculating a multi-channel differential representation.

8.   (Original) The method of claim 1 wherein calculating a differential
representation comprises calculating at least a second order differential
representation.

9.   (Original) The method of claim 1 wherein generating new differential pixel
values comprises performing texture synthesis to obtain a substantially consistent
texture between the differential representation of the boundary pixels and the new
differential pixel values.

10.   (Original) The method of claim 9 wherein performing the texture synthesis
comprises using samples of the differential representation of the image texture region
to generate the new differential pixel values starting from the differential
representation of the boundary pixels.

11.   (Original) The method of claim 1 wherein the new differential pixel values
collectively form a new differential representation for the modification region.

12.   (Original) The method of claim 11 wherein integrating the new differential
pixel values to obtain the modified image comprises iteratively applying at least one
kernel to generate a solution to a partial differential equation having a source term
corresponding to the new differential representation of the modification region.

13.   (Original) The method of claim 12 wherein the partial differential equation comprises a Poisson differential equation.

14.   (Original) The method of claim 13 wherein the boundary pixels in the original image provide Dirichlet boundary conditions for the Poisson differential equation.

15.   (Original) The method of claim 11 wherein the new differential representation for the modification region has an original resolution, wherein integrating the new differential pixel values to obtain a modified image comprises:

resampling the original-resolution new differential representation of the modification region to a lower-resolution new differential representation of the modification region;

calculating new lower-resolution pixel values for the modification region by iteratively applying at least one kernel to generate a solution to a partial differential equation having a source term corresponding to the lower-resolution new differential representation of the modification region;

resampling the new lower-resolution pixel values for the modification region to the original resolution to produce approximate original-resolution pixel values; and

calculating new original-resolution pixel values for the modification region by starting from the approximate original-resolution pixel values and by iteratively applying at least one kernel to generate a solution to a partial differential equation having a source term corresponding to the original-resolution new differential representation of the modification region.

16.   (Original) The method of claim 1 further comprising separating the original image into multiple channels, wherein calculating the differential representation of the image texture region, calculating the differential representation of the boundary pixels, generating the new differential pixel values, and integrating the new

differential pixel values to obtain a modified image are performed for each of the
multiple channels.

17.   (Original) The method of claim 1 further comprising receiving an indication
of a plurality of areas in the original image that collectively comprise the image
texture region.

18.   (Original) A method for modifying an image, the method comprising:
          calculating a differential representation of at least a portion of an original
image;
          calculating a differential representation of at least a portion of a texture source
image;
          performing texture synthesis using samples of the texture source image
differential representation, wherein texture synthesis is performed starting from a
boundary of the original image differential representation and performing the texture
synthesis generates a synthesized differential representation; and
          generating a modified image from the synthesized differential representation
by solving a partial differential equation.

19.   (Original) The method of claim 18 wherein the calculated differential
representations are of a type selected from a group consisting of a gradient, a
Laplacian, a gradient of the Laplacian, and a second Laplacian.

20.   (Original) The method of claim 18 wherein the partial differential equation
comprises a Poisson differential equation having a form selected from the group
consisting of $\Delta f = \nabla \cdot s$, $\Delta f = s$, $\Delta \Delta f = \nabla \cdot s$, and $\Delta \Delta f = s$, where s corresponds to the
synthesized differential representation.

21.   (Original) The method of claim 18 wherein a boundary of the synthesized differential representation matches the boundary of the original image differential representation.

22.   (Original) The method of claim 18 wherein the solution to the partial differential equation satisfies a Dirichlet boundary condition provided by a portion of the original image.

23.   (Original) The method of claim 18 wherein solving the partial differential equation comprises iteratively applying at least one kernel and the synthesized differential representation to a selected starting image.

24.   (Original) The method of claim 18 wherein the texture source image comprises a region in the original image.

25.   (Original) An article comprising a machine-readable medium storing instructions for causing one or more processors to perform operations comprising:

        receiving an identification of a modification region in an original image;

        calculating a differential representation of an image texture region to produce differential texture pixel values;

        calculating a differential representation of boundary pixels in the original image to produce differential boundary pixel values, wherein at least some of the boundary pixels are outside of and adjacent to the modification region;

        generating new differential pixel values for the modification region using the differential texture pixel values to obtain substantial consistency with the differential boundary pixel values; and

        integrating the new differential pixel values to obtain a modified image.

26.   (Original) The article of claim 25 wherein the machine-readable medium stores further instructions for causing one or more processors to perform operations comprising using the modified image as a replacement for the modification region of the original image.

27.   (Original) The article of claim 25 wherein the machine-readable medium stores further instructions for causing one or more processors to perform operations comprising receiving an identification of at least one image texture area, wherein the image texture region comprises the at least one identified image texture area.

28.   (Original) The article of claim 25 wherein calculating the differential representation of the image texture region and calculating the differential representation of the boundary pixels comprises determining derivatives using at least one predefined kernel.

29.   (Original) The article of claim 25 wherein generating new differential pixel values for the modification region comprises generating a differential texture pattern that matches a differential texture pattern of the image texture region.

30.   (Original) The article of claim 25 wherein integrating the new differential pixel values to obtain the modified image comprises iteratively applying at least one kernel to generate a solution to a partial differential equation having a source term corresponding to the new differential representation of the modification region.

31.   (Original) The article of claim 30 wherein integrating the new differential pixel values to obtain the modified image comprises iteratively integrating differential pixel values at progressively higher resolutions beginning at a low resolution.

32.   (Original) The article of claim 25 wherein the original image, the image texture region, and the modified image correspond to one channel of a multiple channel image.

33.   (Original) A method for modifying an image, the method comprising:
        receiving an identification of a modification region in an original image;
        determining a boundary region in the original image, wherein the boundary region is adjacent to the modification region;
        performing texture synthesis in differential space using the boundary region to produce a synthesized differential representation for the modification region; and
        integrating the synthesized differential representation to generate a modified image.

34.   (Original) The method of claim 33 wherein integrating the synthesized differential representation comprises calculating a solution to a partial differential equation having a source term corresponding to the synthesized differential representation.

35.   (Original) The method of claim 34 wherein the partial differential equation comprises a Poisson differential equation.

36.   (Original) The method of claim 35 wherein performing texture synthesis in differential space comprises:
        calculating a Laplacian of the boundary region to produce differential boundary pixel values;
        calculating a Laplacian of a texture region to produce differential texture pixel values; and
        selecting samples of the differential texture pixel values for use in generating the synthesized differential representation.

37.   (Original) The method of claim 33 wherein performing texture synthesis comprises selecting samples from a texture image that match the boundary region in differential space.

38.   (Original) The method of claim 37 wherein the texture image corresponds to a differential space representation of a texture region in the original image.

39.   (Original) A method for generating a modified image, the method comprising:
        receiving an identification of a modification region in an original image;
        calculating a differential representation of at least a portion of a texture source image;
        copying samples of the texture source image differential representation to a location corresponding to the identified modification region to generate a new differential representation for the modification region; and
        integrating the new differential representation for the modification region to produce a modified image.

40.   (Original) The method of claim 39 further comprising using the modified image as a replacement for the modification region of the original image.

41.   (Original) The method of claim 39 wherein the samples of the texture source image differential representation are copied to a location within a differential representation of at least a portion of the original image.

42.   (Original) The method of claim 39 further comprising receiving an identification of the texture source image, wherein the texture source image comprises a portion of the original image.

43.   (Original) The method of claim 39 further comprising receiving an identification of the texture source image, wherein the texture source image comprises at least a portion of a different image from the original image.

44.   (Original) The method of claim 39 wherein copying samples of the texture source image differential representation to a location corresponding to the identified modification region comprises filling a region corresponding to the identified modification region with samples of the texture source image differential representation.

45.   (Original) The method of claim 44 wherein multiple different samples are available in the texture source image differential representation.

46.   (Original) The method of claim 39 wherein integrating the new differential representation for the modification region to produce a modified image comprises calculating a solution to a partial differential equation.

47.   (Original) The method of claim 46 wherein integrating the new differential representation for the modification region to produce a modified image comprises using a boundary region adjacent to the modification region in the original image to provide boundary conditions for calculating the solution to the partial differential equation.

48.   (Original) A method for modifying an image, the method comprising:
        receiving an identification of a modification region in an original image;
        determining a rate of change between pixels across a region of a texture source image;
        applying the rate of change to the modification region; and
        determining new pixel values for the modification region that exhibit the rate of

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change and that exhibit consistency with boundary pixel values adjacent to the
modification region in the original image.

49.   (New) An article comprising a machine-readable medium storing instructions
adapted to cause data processing apparatus to perform operations comprising:

        receiving an identification of a modification region in an original image;

        determining a rate of change between pixels across a region of a texture source
image;

        applying the rate of change to the modification region; and

        determining new pixel values for the modification region that exhibit the rate of
change and that exhibit consistency with boundary pixel values adjacent to the
modification region in the original image.

50.   (New) The article of claim 49 wherein the instructions are adapted to cause data
processing apparatus to:

        determine a rate of change between pixels across a region of a texture source
image by calculating a differential representation of the texture source image;

        apply the rate of change to the modification region by:

                calculating a differential representation of at least a portion of an original
image; and

                performing texture synthesis using samples of the differential
representation of the texture source image, wherein texture synthesis is performed
starting from a boundary of the original image differential representation and performing
the texture synthesis generates a synthesized differential representation; and

        determine new pixel values for the modification region by generating a modified
image from the synthesized differential representation by solving a partial differential
equation.

51.   (New) The article of claim 50 wherein the at least a portion of the original image
comprises pixels outside of and adjacent to the modification region.

52.   (New) The article of claim 51 wherein the instructions are adapted to cause data
processing apparatus to determine new pixel values for the modification region by using
a boundary region adjacent to the modification region in the original image to provide
boundary conditions for solving the partial differential equation.

53.   (New) The article of claim 51 wherein the instructions are adapted to cause data
processing apparatus to generate a modified image from the synthesized differential
representation by iteratively applying at least one kernel to generate a solution to the
partial differential equation having a source term corresponding to the new differential
representation of the modification region.

54.   (New) The article of claim 50 wherein the samples of the differential
representation of the texture source image have an original resolution, and the
instructions are adapted to cause data processing apparatus to generate a modified image
from the synthesized differential representation by:
        resampling the original-resolution samples to lower-resolution samples;
        calculating new lower-resolution pixel values for the modification region by
iteratively applying at least one kernel to generate a solution to a partial differential
equation having a source term corresponding to the lower-resolution samples;
        resampling the new lower-resolution pixel values for the modification region to
the original resolution to produce approximate original-resolution pixel values; and
        calculating new original-resolution pixel values for the modification region by
starting from the approximate original-resolution pixel values and by iteratively applying
at least one kernel to generate a solution to a partial differential equation having a source

term corresponding to the original-resolution samples, wherein the new pixel values for the modification region comprise the new original-resolution pixel values.

55.   (New) The article of claim 50 wherein the instructions are adapted to cause data processing apparatus to calculate a differential representation by at least one of:

determining derivatives using a predefined kernel;

calculating a multi-channel differential representation; or

calculating at least a second order differential representation.

56.   (New) The article of claim 50, wherein the instructions are adapted to cause data processing apparatus to generate a modified image from the synthesized differential representation by iteratively integrating differential pixel values in the synthesized differential representation at progressively higher resolutions beginning at a low resolution.

57.   (New) A system comprising:

at least one memory adapted to store at least one of image data or instructions for processing image data;

at least one processor configured to:

receive an identification of a modification region in an original image;

determine a rate of change between pixels across a region of a texture source image;

apply the rate of change to the modification region; and

determine new pixel values for the modification region that exhibit the rate of change and that exhibit consistency with boundary pixel values adjacent to the modification region in the original image.

58.   (New) The system of claim 57 wherein the at least one processor is further
configured to:

determine a rate of change between pixels across a region of a texture source
image by calculating a differential representation of the texture source image;

apply the rate of change to the modification region by:

calculating a differential representation of at least a portion of an original
image; and

performing texture synthesis using samples of the differential
representation of the texture source image, wherein texture synthesis is performed
starting from a boundary of the original image differential representation and performing
the texture synthesis generates a synthesized differential representation; and

determine new pixel values for the modification region by generating a modified
image from the synthesized differential representation by solving a partial differential
equation.

59.   (New) The system of claim 58 wherein the at least a portion of the original image
comprises pixels outside of and adjacent to the modification region.

60.   (New) The system of claim 59 wherein the at least one processor is further
configured to determine new pixel values for the modification region by using a
boundary region adjacent to the modification region in the original image to provide
boundary conditions for solving the partial differential equation.

61.   (New) The system of claim 59 wherein the at least one processor is further
configured to generate a modified image from the synthesized differential representation
by iteratively applying at least one kernel to generate a solution to the partial differential
equation having a source term corresponding to the new differential representation of the
modification region.

62.   (New) The system of claim 58 wherein the samples of the differential

representation of the texture source image have an original resolution, and the at least one

processor is further configured to generate a modified image from the synthesized

differential representation by:

        resampling the original-resolution samples to lower-resolution samples;

        calculating new lower-resolution pixel values for the modification region by

iteratively applying at least one kernel to generate a solution to a partial differential

equation having a source term corresponding to the lower-resolution samples;

        resampling the new lower-resolution pixel values for the modification region to

the original resolution to produce approximate original-resolution pixel values; and

        calculating new original-resolution pixel values for the modification region by

starting from the approximate original-resolution pixel values and by iteratively applying

at least one kernel to generate a solution to a partial differential equation having a source

term corresponding to the original-resolution samples, wherein the new pixel values for

the modification region comprise the new original-resolution pixel values.

63.   (New) The system of claim 58 wherein the at least one processor is further

configured to calculate a differential representation by at least one of:

        determining derivatives using a predefined kernel;

        calculating a multi-channel differential representation; or

        calculating at least a second order differential representation.

64.   (New) The system of claim 58 wherein the at least one processor is further

configured to generate a modified image from the synthesized differential representation

by iteratively integrating differential pixel values in the synthesized differential

representation at progressively higher resolutions beginning at a low resolution.